

**(57) Abstract:** The invention concerns an X-ray detector with a photo-sensitive detector layer (10) above which a scintillation layer (30) for the conversion of X-rays (X) into photons ( $\nu$ ) is disposed. Photons ( $\nu$ ) are reflected back into the scintillation layer (30) by a reflector (40) that is provided on the scintillation layer (30) for an improved signal gain and signal-to-noise ratio. The reflectivity of the reflector (40) can be externally controlled. This is achieved for example by a reflective layer (41, 42, 43) of E-Ink being disposed between two electrodes (44a, 44b). Thus the reflectivity can be decreased at sufficiently high X-ray doses in order to improve image sharpness and dynamic range of the detector.



SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

*For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*

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